SD50 with IO-Link Status Display Product Manual

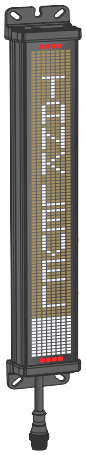
Original Instructions
p/n: 242037 Rev. D
30-Jan-26

Contents

Chapter Contents

Chapter 1 Features

Provide More Status Information in the Most Helpful Locations



- Easily configurable, versatile display can be installed nearly anywhere, making it a simple yet powerful alternative to complex HMIs and other displays
- Great for displaying takt time, equipment status, assembly sequences, counts, and measurements where they are most useful
- Integrates into many different systems and applications, especially Banner sensing, safety, and monitoring solutions
- Quick and easy configuration—simply define the desired text and call it via discrete control or process data
- Bright white LED display and multicolored status LEDs legible from 10 meters away inform operators about exactly what is going on so they can respond quickly and accurately
- IP65-rated polycarbonate housing resists impact and condensation to provide clear communication in challenging and changing environmental conditions

IMPORTANT: Read the following instructions before operating the light. Please download the complete SD50 with IO-Link Status Display technical documentation, available in multiple languages, from www.bannerengineering.com for details on the proper use, applications, Warnings, and installation instructions of this device.

IMPORTANT: Lea el siguiente instructivo antes de operar el luminario. Por favor descargue desde www.bannerengineering.com toda la documentación técnica de los SD50 with IO-Link Status Display, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, advertencias, y las instrucciones de instalación de estos dispositivos.

IMPORTANT: Lisez les instructions suivantes avant d'utiliser le luminaire. Veuillez télécharger la documentation technique complète des SD50 with IO-Link Status Display sur notre site www.bannerengineering.com pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et les instructions de montage.

Models

Model Key

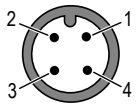
Series	Height	Style	Display Length	Display Text Color	Control	Connector[1]
SD	50	P	300	W	K	QP
Status Display	50 mm height	P = Pro	300 = 300 mm	W = White	K = IO-Link	QP = 150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector

[1] Models with a quick-disconnect connector require a mating cordset.

Chapter Contents

Chapter 2 Wiring

IO-Link Wiring

4-Pin Male M12 Pinout	Pinout Key and Wiring
	1. Brown - 18 V DC to 30 V DC 2. White - Not used 3. Blue - DC Common 4. Black - IO-Link Communication

Chapter Contents

Chapter 3 IO-Link Data Map

SD50 with IO-Link Status Display

Vendor ID	451 (0x01c3)
Vendor Name	Banner Engineering Corporation
Vendor Text	More Sensors. More Solutions.
Vendor URL	www.bannerengineering.com/io-link
Device ID	393235 (0x060013)
Device Family	Status Display

Features

Block Parameter	Yes
Data Storage	Yes
Supported Access Locks	Parameter: Yes Data Storage: Yes Local Parameterization: No Local User Interface: No

Communication

IO-Link Revision	V1.1
Transmission Rate	38400 bit/s (COM2)
Minimum Cycle Time	20 ms
SIO Mode Supported	No
M-Sequence Capability	PREOPERATE = TYPE_0 with 1 octet on-request data
	OPERATE = TYPE_2_V with 1 octet on-request data
	ISDU supported

Device Variant

Description	SD50 with IO-Link Status Display
Product ID	SD50P300WKQP
Connection Type	150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector
- Pin 1	Brown: L+
- Pin 2	White: Other
- Pin 3	(light) Blue: L-
- Pin 4	Black: C/Q

Process Data Out: Run Mode

Bit Length: 256

Data Type: 256-bit record

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
1	0	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep		Animation	The Animation type.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
2	4	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.
3	8	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
4	11	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom		Speed	The speed of the Animation.
5	13	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random		Pulse Pattern	The pattern of the Animation.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
6	16	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
7	20	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.
8	24	29-octet Strong UTF-8			Display Text	The text displayed on the screen when Run Mode is active.

Process Data Out: Message Mode

Bit Length: 256

Data Type: 256-bit record

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
1	224	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep		Animation	The Animation type.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
2	228	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.
3	232	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
4	235	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom		Speed	The speed of the Animation.
5	237	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random		Pulse Pattern	The pattern of the Animation.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
6	240	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
7	244	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.
8	248	4-bit UInteger	1..13 = Message Selection (1-13)		Message Selection 1	Message Mode Message Selection 1 (1-13)
9	252	4-bit UInteger	1..13 = Message Selection (1-13)		Message Selection 2	Message Mode Message Selection 2 (1-13

Process Data Out: Measure Mode

Bit Length: 256

Data Type: 256-bit record

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
1	240	16-bit UInteger			Measure Mode Value	The value describing the device's level. The range is defined in Measure Mode Parameter Data.

Process Data Out: Timer Mode

Bit Length: 256

Data Type: 256-bit record

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
1	254	Boolean			Run Timer	Run the timer in Timer Mode.
2	255	Boolean			Reset Timer	Reset the time in Timer Mode.

Process Data Out: Counter Mode

Bit Length: 256

Data Type: 256-bit record

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Name	Description
1	253	Boolean			Increment Count	Increase the counter value when in Counter Mode.
2	254	Boolean			Decrement Count	Decrease the counter value when in Counter Mode.
3	255	Boolean			Reset Count	Reset the count in Counter Mode.

Index 0: Direct Parameters 1

Data Type: 128-bit Record

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	120	8-bit UInteger		0	RO	Reserved	
2	112	8-bit UInteger		0	RO	Master Cycle Time	
3	104	8-bit UInteger		0	RO	Min Cycle Time	
4	96	8-bit UInteger		0	RO	M-Sequence Capability	
5	88	8-bit UInteger		17	RO	IO-Link Version ID	
6	80	8-bit UInteger		0	RO	Process Data Input Length	
7	72	8-bit UInteger		0	RO	Process Data Output Length	
8	64	8-bit UInteger		0	RO	Vendor ID 1	
9	56	8-bit UInteger		0	RO	Vendor ID 2	
10	48	8-bit UInteger		0	RO	Device ID 1	
11	40	8-bit UInteger		0	RO	Device ID 2	
12	32	8-bit UInteger		0	RO	Device ID 3	
13	24	8-bit UInteger		0	RO	Reserved	
14	16	8-bit UInteger		0	RO	Reserved	
15	8	8-bit UInteger		0	RO	Reserved	
16	0	8-bit UInteger	130 = Restore Factory Settings	0	WO	Standard Command	

Index 1: Direct Parameters 2

Data Type: 128-bit Record

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	120	8-bit UInteger		0		Device Specific Parameter 1	
2	112	8-bit UInteger		0		Device Specific Parameter 2	
3	104	8-bit UInteger		0		Device Specific Parameter 3	
4	96	8-bit UInteger		0		Device Specific Parameter 4	
5	88	8-bit UInteger		0		Device Specific Parameter 5	
6	80	8-bit UInteger		0		Device Specific Parameter 6	
7	72	8-bit UInteger		0		Device Specific Parameter 7	
8	64	8-bit UInteger		0		Device Specific Parameter 8	
9	56	8-bit UInteger		0		Device Specific Parameter 9	
10	48	8-bit UInteger		0		Device Specific Parameter 10	
11	40	8-bit UInteger		0		Device Specific Parameter 11	
12	32	8-bit UInteger		0		Device Specific Parameter 12	
13	24	8-bit UInteger		0		Device Specific Parameter 13	
14	16	8-bit UInteger		0		Device Specific Parameter 14	
15	8	8-bit UInteger		0		Device Specific Parameter 15	
16	0	8-bit UInteger		0		Device Specific Parameter 16	

Index 2: Standard Command

Data Type: 8-bit UInteger

Allowed Values: 130 = Restore Factory Settings

Access Rights: WO

Modifies other variables.

Index 12: Device Access Locks

Data Type: 16-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	Boolean		FALSE		Parameter (write) Access Lock	
2	1	Boolean		FALSE		Data Storage Lock	
3	2	Boolean				Local Parameterization Lock	

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
4	3	Boolean				Local User Interface Lock	

Index 16: Vendor Name
Data Type: 64-octet String UTF-8

Default Value: "Banner Engineering Corporation"

Access Rights: RO

Index 17: Vendor Text
Data Type: 64-octet String UTF-8

Default Value: "More Sensors. More Solutions."

Access Rights: RO

Index 18: Product Name
Data Type: 64-octet String UTF-8

Access Rights: RO

Index 19: Product ID
Data Type: 64-octet String UTF-8

Access Rights: RO

Index 20: Product Text
Data Type: 64-octet String UTF-8

Access Rights: RO

Index 21: Serial Number
Data Type: 16-octet String UTF-8

Access Rights: RO

Index 22: Hardware Version
Data Type: 64-octet String UTF-8

Access Rights: RO

Index 23: Firmware Version
Data Type: 64-octet String UTF-8

Access Rights: RO

Index 24: Application Specific Tag
Data Type: 32-octet String UTF-8

Access Rights: RW

Index 36: Device Status

Data Type: 8-bit UInteger

Allowed Values:

0 = Device is OK
1 = Maintenance required
2 = Out of specification
3 = Functional check
4 = Failure
5..255 = Reserved

Access Rights: RO

Dynamic

Index 37: Detailed Device Status

Data Type: Array[6] of 3-octet OctetString (subindex access not supported)

Access Rights: RO

Dynamic

Index 80: Operating Mode Selection

Description: Operating Mode Selection

Data Type: 8-bit UInteger

Allowed Values:

0 = Run Mode
1 = Message Mode
2 = Measure Mode
3 = Timer Mode
4 = Counter Mode

Default Value: 0

Access Rights: RW

Index 81: Additional Settings

Description: Additional Settings

Data Type: 32-bit Record

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger		100		Custom Intensity (%)	The customizable intensity of the color, defined as a percentage.
2	8	8-bit UInteger		15		Custom Flash Rate (0.5 - 20)	The customizable flash rate of the animation.
3	16	8-bit UInteger		100		Custom Display Intensity (%)	The customizable intensity of the display, defined as a percentage.
4	24	8-bit UInteger		15		Custom Display Scroll Speed (0 - 255)	The customizable scroll speed of the display.

Index 82: Display Settings

Description: Display Settings

Data Type: 16-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	Boolean	false = White true = Black	0		Display Text Color	Sets the display text color to white or black.
2	1	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Display Intensity	Defines the level of intensity for the display.
3	4	Boolean	false = Towards the connector true = Away from the connector	0		Display Scroll Direction	Sets the scroll direction of the display text, either towards or away from the connector.
4	5	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Display Scroll Speed	Defines the speed at which the display text scrolls, when Display Scroll Mode is defined as Auto or On.
5	7	Boolean	false = Off true = On	0		Display Mirroring	Mirrors the display text so that it is readable through a mirror.
6	8	2-bit UInteger	0 = Auto 1 = On 2 = Off	0		Display Scroll Mode	Defines whether the device scrolls the display text. When defined as Auto, the display text scrolls if the string length (in pixels) is greater than the display's width.
7	10	2-bit UInteger	0 = 0 1 = 180 2 = 90 3 = 270	0		Display Orientation	The amount of rotation applied to the display text.
8	12	2-bit UInteger	0 = Left 1 = Right 2 = Center	0		Display Justification	The justification of the display text as left, right, or center aligned when the device is not scrolling.

Index 83: Timer/Counter Mode Settings

Description: Timer/Counter Mode Settings

Data Type: 40-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	16-bit UInteger		10		Value	The numerical value to count up to or down from.
2	16	8-bit UInteger	0 = Seconds 1 = Deciseconds 2 = Centiseconds 3 = Milliseconds	0		Timer Unit Type	Defines the timer unit used along with the timer value to determine the total time for the timer. Only applicable for Timer Mode.
3	24	8-bit UInteger	0 = Down 1 = Up	1		Timer Count Type	Define if the Value counts up or counts down.
4	32	8-bit UInteger	0 = Disabled 1 = Enabled	0		Enable Auto Reload	Enable or disable the counter or timer Value automatically reloading after reaching the end of its cycle.

Index 84: Measure General Configuration

Description: Settings Measure/Timer/Counter General

Data Type: 288-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Off 1 = Low 2 = Medium 3 = High	0		Filtering	The amount of filtering for Measure Mode.
2	8	8-bit UInteger	0 = Off 1 = Low 2 = Medium 3 = High	0		Hysteresis	The hysteresis for Thresholds.
3	16	16-octet String UTF-8		"Time="		Measure/Timer/ Counter Mode Data Label	The text that precedes the Measure/Timer/ Counter Mode Value, up to 16 characters.
4	144	8-bit UInteger	0 = Disabled 1 = Enabled	1		Measure/Timer/ Counter Mode Value	Enable or disable the display of the Measure/Timer/ Counter Mode Value.
5	152	8-bit UInteger	0 = Disabled 1 = Enabled	1		Measure/Timer/ Counter Mode Bar Graph	Enable or disable the display of the Measure/Timer/ Counter Mode Bar Graph.
6	160	16-bit UInteger		0		Output Scale Value Low	The lowest number displayed.
7	176	16-bit UInteger		10		Output Scale Value High	The highest number displayed.
8	192	16-bit UInteger		0		Input Scale Value Low	The lowest number inputted by the Level Mode Process Data. Set to 0 in Timer/ Counter Mode.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
9	208	16-bit UInteger		65535		Input Scale Value High	The highest number inputted by the Level Mode Process Data. Set to 65535 in Timer/ Counter Mode.
10	224	4-octet String UTF-8		"s"		Measure/Timer/ Counter Mode Value Label	The text that follows the Measure/Timer/ Counter Mode Value, up to 4 characters.
11	256	8-bit UInteger	0 = 0 1 = 180 2 = 90 3 = 270	0		Measure/Timer/ Counter Mode Display Orientation	The orientation of the Bar Graph in Measure/ Timer/Counter Mode.
12	264	8-bit UInteger	0 = Disabled 1 = Enabled	0		Measure/Timer/ Counter Mode Display Minimal Bar Graph	Enable or disable the minimal display of the bar graph in Measure/ Timer/Counter Mode.
13	272	8-bit UInteger	0..3 = Decimal Places (0-3)	1		Measure/Timer/ Counter Mode Decimal Places	The number of decimal places to display in Measure/Timer/ Counter Mode.
14	280	8-bit UInteger	0 = Disabled 1 = Enabled	0		Measure/Timer/ Counter Mode Display as Time	Enable or disable the display of the Measure/Timer/ Counter Mode Value in time format (HH:MM:SS).

Index 85: Measure Base Configuration

Description: Settings Measure/Timer/Counter Base

Data Type: 288-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Disabled 1 = Enabled	0		Display Override	Overrides the display string when in this threshold.
2	8	32-octet String UTF-8		"Base"		Override String	The string that displays when Override is enabled and operating in the current threshold/base configuration.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
3	264	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep	0		Animation	The Animation type.
4	268	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.
5	272	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
6	275	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Speed	The speed of the Animation.
7	277	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random	0		Pulse Pattern	The pattern of the Animation.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
8	280	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
9	284	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.

Index 86: Measure Threshold 1 Configuration

Description: Settings for Threshold 1

Data Type: 320-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Disabled 1 = Enabled	1		Threshold Enable	Enables the threshold.
2	8	8-bit UInteger	0..100 = Threshold (%)	25		Threshold Value	The value of the threshold, defined as a percentage.
3	16	8-bit UInteger	0 = Less Than 1 = Greater Than	0		Threshold Comparison	Sets the comparison type of the threshold.
4	24	8-bit UInteger	0 = Disabled 1 = Enabled	0		Threshold Override	When enabled, all segments display an override animation.
5	32	8-bit UInteger	0 = Disabled 1 = Enabled	0		Display Override	Overrides the display string when in this threshold.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
6	40	32-octet String UTF-8		"Thresh 1"		Override String	The string that displays when Override is enabled and operating in the current threshold/base configuration.
7	296	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep	1		Animation	The Animation type.
8	300	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.
9	304	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
10	307	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Speed	The speed of the Animation.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
11	309	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random	0		Pulse Pattern	The pattern of the Animation.
12	312	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
13	316	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.

Index 87: Measure Threshold 2 Configuration

Description: Settings for Threshold 2

Data Type: 320-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Disabled 1 = Enabled	1		Threshold Enable	Enables the threshold.
2	8	8-bit UInteger	0..100 = Threshold (%)	50		Threshold Value	The value of the threshold, defined as a percentage.
3	16	8-bit UInteger	0 = Less Than 1 = Greater Than	0		Threshold Comparison	Sets the comparison type of the threshold.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
4	24	8-bit UInteger	0 = Disabled 1 = Enabled	0		Threshold Override	When enabled, all segments display an override animation.
5	32	8-bit UInteger	0 = Disabled 1 = Enabled	0		Display Override	Overrides the display string when in this threshold.
6	40	32-octet String UTF-8		"Thresh 2"		Override String	The string that displays when Override is enabled and operating in the current threshold/base configuration.
7	296	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep	1		Animation	The Animation type.
8	300	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	2		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.
9	304	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
10	307	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Speed	The speed of the Animation.
11	309	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random	0		Pulse Pattern	The pattern of the Animation.
12	312	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
13	316	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.

Index 88: Measure Threshold 3 Configuration

Description: Settings for Threshold 3

Data Type: 320-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Disabled 1 = Enabled	1		Threshold Enable	Enables the threshold.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
2	8	8-bit UInteger	0..100 = Threshold (%)	75		Threshold Value	The value of the threshold, defined as a percentage.
3	16	8-bit UInteger	0 = Less Than 1 = Greater Than	0		Threshold Comparison	Sets the comparison type of the threshold.
4	24	8-bit UInteger	0 = Disabled 1 = Enabled	0		Threshold Override	When enabled, all segments display an override animation.
5	32	8-bit UInteger	0 = Disabled 1 = Enabled	0		Display Override	Overrides the display string when in this threshold.
6	40	32-octet String UTF-8		"Thresh 3"		Override String	The string that displays when Override is enabled and operating in the current threshold/base configuration.
7	296	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep	1		Animation	The Animation type.
8	300	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	1		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
9	304	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
10	307	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Speed	The speed of the Animation.
11	309	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random	0		Pulse Pattern	The pattern of the Animation.
12	312	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
13	316	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.

Index 89: Measure Threshold 4 Configuration

Description: Settings for Threshold 4

Data Type: 320-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger	0 = Disabled 1 = Enabled	1		Threshold Enable	Enables the threshold.
2	8	8-bit UInteger	0..100 = Threshold (%)	100		Threshold Value	The value of the threshold, defined as a percentage.
3	16	8-bit UInteger	0 = Less Than 1 = Greater Than	0		Threshold Comparison	Sets the comparison type of the threshold.
4	24	8-bit UInteger	0 = Disabled 1 = Enabled	0		Threshold Override	When enabled, all segments display an override animation.
5	32	8-bit UInteger	0 = Disabled 1 = Enabled	0		Display Override	Overrides the display string when in this threshold.
6	40	32-octet String UTF-8		"Thresh 4"		Override String	The string that displays when Override is enabled and operating in the current threshold/base configuration.
7	296	4-bit UInteger	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = Half/Half Steady 5 = Half/Half Flash 6 = Intensity Sweep 7 = Two Color Sweep	6		Animation	The Animation type.
8	300	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	2		Color 1	The main color of the Animation. Custom Colors are defined in Parameter Data.

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Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
9	304	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 1 Intensity	The intensity of Color 1. Custom Intensity is defined in Parameter Data.
10	307	2-bit UInteger	0 = Slow 1 = Standard 2 = Fast 3 = Custom	1		Speed	The speed of the Animation.
11	309	3-bit UInteger	0 = Normal 1 = Strobe 2 = Three Pulse 3 = SOS 4 = Random	0		Pulse Pattern	The pattern of the Animation.
12	312	4-bit UInteger	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White 14 = Custom 1 15 = Custom 2	0		Color 2	The secondary color of the Animation. Only used if the Animation has two colors. Custom Colors are defined in Parameter data.
13	316	3-bit UInteger	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0		Color 2 Intensity	The intensity of Color 2. Custom Intensity is defined in Parameter Data.

Index 90: Custom 1

Description: Custom 1

Data Type: 24-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger		255		Red	The red value for Custom Color 1.
2	8	8-bit UInteger		255		Green	The green value for Custom Color 1.
3	16	8-bit UInteger		255		Blue	The blue value for Custom Color 1.

Index 91: Custom 2

Description: Custom 2

Data Type: 24-bit Record (subindex access not supported)

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	8-bit UInteger		255		Red	The red value for Custom Color 2.
2	8	8-bit UInteger		255		Green	The green value for Custom Color 2.
3	16	8-bit UInteger		255		Blue	The blue value for Custom Color 2.

Index 92: Message Mode Settings

Description: Message Mode Settings

Data Type: 1792-bit Record

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	256	32-octet String UTF-8		"Reset"		Message 1	Message Mode Message 1
2	512	32-octet String UTF-8		"Fault"		Message 2	Message Mode Message 2
3	768	32-octet String UTF-8		"Stop"		Message 3	Message Mode Message 3
4	1024	32-octet String UTF-8		"Start"		Message 4	Message Mode Message 4
5	1280	32-octet String UTF-8		"Changeover"		Message 5	Message Mode Message 5
6	1536	32-octet String UTF-8		"Open"		Message 6	Message Mode Message 6

Index 93: Message Mode Settings, Continued

Description: Message Mode Settings, Continued

Data Type: 1792-bit Record

Access Rights: RW

Subindex	Bit Offset	Data Type	Allowed Values	Default Value	Acc. Restr.	Name	Description
1	0	32-octet String UTF-8		"Welcome"		Message 7	Message Mode Message 7
2	256	32-octet String UTF-8		"Quality"		Message 8	Message Mode Message 8
3	512	32-octet String UTF-8		"Warning"		Message 9	Message Mode Message 9
4	768	32-octet String UTF-8		"Alarm"		Message 10	Message Mode Message 10
5	1024	32-octet String UTF-8		"Break"		Message 11	Message Mode Message 11
6	1280	32-octet String UTF-8		"Run"		Message 12	Message Mode Message 12
7	1536	32-octet String UTF-8		"Maintenance"		Message 13	Message Mode Message 13

Chapter Contents

Chapter 4 Specifications

Supply Voltage

18 V DC to 30 V DC

Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)

See the electrical characteristics on the product label.

Supply Current

350 mA max. at 18 V DC

260 mA max. at 24 V DC

210 mA max. at 30 V DC

Connections

150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector

Models with a quick-disconnect connector require a mating cordset

Do not spray cable with high-pressure sprayer or cable damage will result

Operating Temperature

–20 °C to +50 °C (–4 °F to +122 °F)

Storage Temperature

–40 °C to +70 °C (–40 °F to +158 °F)

Environmental Rating

Rated IP65

Suitable for damp locations per UL 2108

Vibration and Mechanical Shock

Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 1.0 mm amplitude, 5 minutes sweep, 30 minutes dwell)

Meets IEC 60068-2-27 requirements (Shock: 15G 11 ms duration, half sine wave)

Construction

Black polycarbonate housing and end caps

Internal silicone-encapsulated LEDs

Smoky polycarbonate window

Character Limit

Run Mode: 29 characters

All other Modes: 32 characters

Certifications

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

Mounting

M5 and 1/4-20 compatible end caps (not included)

Clip brackets for mounting are available

FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(b)) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

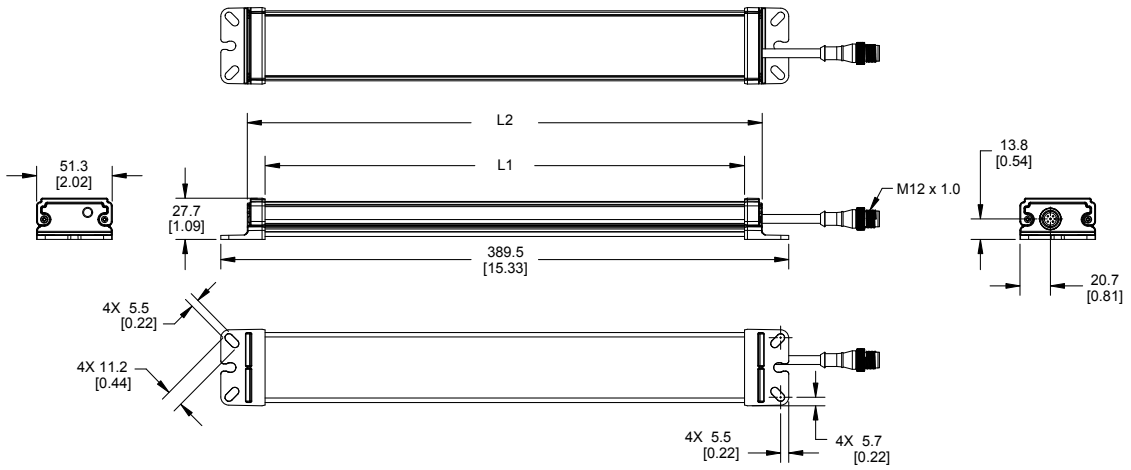
Industry Canada ICES-003(B)

This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

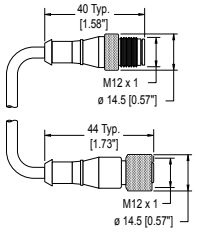
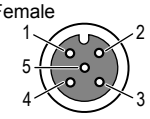
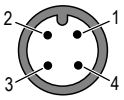


Models	L1	L2
SD50..300..	329.5 mm (12.97 in)	353.5 mm (13.92 in)

Chapter Contents

Chapter 5 Accessories

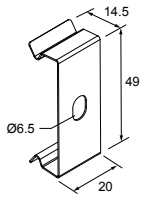
Cordsets

4-pin A-Code Double-Ended M12 Female to M12 Male Cordsets (datasheet p/n 236186)				
Model	**Length**	**Dimensions (mm)**	**Pinouts**	
BC-M12F4-M12M4-22-1	1 m (3.28 ft)		Female  Male 	1 = Brown 2 = White 3 = Blue 4 = Black 5 = Unused c UL us LISTED
BC-M12F4-M12M4-22-2	2 m (6.56 ft)			
BC-M12F4-M12M4-22-3	3 m (9.84 ft)			
BC-M12F4-M12M4-22-4	4 m (13.12 ft)			
BC-M12F4-M12M4-22-5	5 m (16.4 ft)			
BC-M12F4-M12M4-22-10	10 m (30.81 ft)			
BC-M12F4-M12M4-22-15	15 m (49.2 ft)			

Mounting Brackets

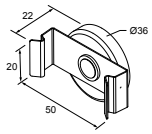
LMBSD50

- Metal mounting bracket kit
- Hardware included
- CAD Files: DXF, PDF, IGS, STP



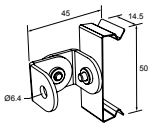
LMBSD50MAG

- Magnetic mounting bracket kit
- Up to 7.26 kg (16 lb) pull
- Hardware included
- CAD Files: DXF, PDF, IGS, STP



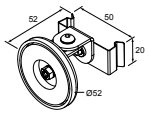
LMBSD50-180S

- Metal mounting bracket kit with 180-degree rotation
- Stainless steel
- Hardware included
- CAD Files: DXF, PDF, IGS, STP



LMBSD50-180SMAG

- Magnetic mounting bracket kit with 180-degree rotation
- Stainless steel
- Up to 7.26 kg (16 lb) pull
- Hardware included
- CAD Files: DXF, PDF, IGS, STP



Chapter Contents

Chapter 6 Product Support and Maintenance

Encoding Table and Unicode Characters

Unicode Code Point	Character	Name
U+0020		SPACE
U+0021	!	EXCLAMATION MARK
U+0022	"	QUOTATION MARK
U+0023	#	NUMBER SIGN
U+0024	$	DOLLAR SIGN
U+0025	%	PERCENT SIGN
U+0026	&	AMPERSAND
U+0027	'	APOSTROPHE
U+0028	(	LEFT PARENTHESIS
U+0029	)	RIGHT PARENTHESIS
U+002A	*	ASTERISK
U+002B	+	PLUS SIGN
U+002C	,	COMMA
U+002D	-	HYPHEN-MINUS
U+002E	.	FULL STOP
U+002F	/	SOLIDUS
U+0030	0	DIGIT ZERO
U+0031	1	DIGIT ONE
U+0032	2	DIGIT TWO
U+0033	3	DIGIT THREE
U+0034	4	DIGIT FOUR
U+0035	5	DIGIT FIVE
U+0036	6	DIGIT SIX
U+0037	7	DIGIT SEVEN
U+0038	8	DIGIT EIGHT
U+0039	9	DIGIT NINE
U+003A	:	COLON
U+003B	;	SEMICOLON
U+003C	<	LESS-THAN SIGN
U+003D	=	EQUALS SIGN
U+003E	>	GREATER-THAN SIGN

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Unicode Code Point	Character	Name
U+003F	?	QUESTION MARK
U+0040	@	COMMERCIAL AT
U+0041	A	LATIN CAPITAL LETTER A
U+0042	B	LATIN CAPITAL LETTER B
U+0043	C	LATIN CAPITAL LETTER C
U+0044	D	LATIN CAPITAL LETTER D
U+0045	E	LATIN CAPITAL LETTER E
U+0046	F	LATIN CAPITAL LETTER F
U+0047	G	LATIN CAPITAL LETTER G
U+0048	H	LATIN CAPITAL LETTER H
U+0049	I	LATIN CAPITAL LETTER I
U+004A	J	LATIN CAPITAL LETTER J
U+004B	K	LATIN CAPITAL LETTER K
U+004C	L	LATIN CAPITAL LETTER L
U+004D	M	LATIN CAPITAL LETTER M
U+004E	N	LATIN CAPITAL LETTER N
U+004F	O	LATIN CAPITAL LETTER O
U+0050	P	LATIN CAPITAL LETTER P
U+0051	Q	LATIN CAPITAL LETTER Q
U+0052	R	LATIN CAPITAL LETTER R
U+0053	S	LATIN CAPITAL LETTER S
U+0054	T	LATIN CAPITAL LETTER T
U+0055	U	LATIN CAPITAL LETTER U
U+0056	V	LATIN CAPITAL LETTER V
U+0057	W	LATIN CAPITAL LETTER W
U+0058	X	LATIN CAPITAL LETTER X
U+0059	Y	LATIN CAPITAL LETTER Y
U+005A	Z	LATIN CAPITAL LETTER Z
U+005B	[	LEFT SQUARE BRACKET
U+005C	\	REVERSE SOLIDUS
U+005D	]	RIGHT SQUARE BRACKET
U+005E	^	CIRCUMFLEX ACCENT
U+005F	_	LOW LINE
U+0060	`	GRAVE ACCENT
U+0061	a	LATIN SMALL LETTER A
U+0062	b	LATIN SMALL LETTER B
U+0063	c	LATIN SMALL LETTER C
U+0064	d	LATIN SMALL LETTER D
U+0065	e	LATIN SMALL LETTER E
U+0066	f	LATIN SMALL LETTER F
U+0067	g	LATIN SMALL LETTER G
U+0068	h	LATIN SMALL LETTER H

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Unicode Code Point	Character	Name
U+0069	i	LATIN SMALL LETTER I
U+006A	j	LATIN SMALL LETTER J
U+006B	k	LATIN SMALL LETTER K
U+006C	l	LATIN SMALL LETTER L
U+006D	m	LATIN SMALL LETTER M
U+006E	n	LATIN SMALL LETTER N
U+006F	o	LATIN SMALL LETTER O
U+0070	p	LATIN SMALL LETTER P
U+0071	q	LATIN SMALL LETTER Q
U+0072	r	LATIN SMALL LETTER R
U+0073	s	LATIN SMALL LETTER S
U+0074	t	LATIN SMALL LETTER T
U+0075	u	LATIN SMALL LETTER U
U+0076	v	LATIN SMALL LETTER V
U+0077	w	LATIN SMALL LETTER W
U+0078	x	LATIN SMALL LETTER X
U+0079	y	LATIN SMALL LETTER Y
U+007A	z	LATIN SMALL LETTER Z
U+007B	{	LEFT CURLY BRACKET
U+007C	|	VERTICAL LINE
U+007D	}	RIGHT CURLY BRACKET
U+007E	~	TILDE
U+00A0		NO-BREAK SPACE
U+00A1	¡	INVERTED EXCLAMATION MARK
U+00A2	¢	CENT SIGN
U+00A3	£	POUND SIGN
U+00A4	¤	CURRENCY SIGN
U+00A5	¥	YEN SIGN
U+00A6	¦	BROKEN BAR
U+00A7	§	SECTION SIGN
U+00A8	¨	DIAERESIS
U+00A9	©	COPYRIGHT SIGN
U+00AA	ª	FEMININE ORDINAL INDICATOR
U+00AB	«	LEFT-POINTING DOUBLE ANGLE QUOTATION MARK
U+00AC	¬	NOT SIGN
U+00AD		SOFT HYPHEN
U+00AE	®	REGISTERED SIGN
U+00AF	¯	MACRON
U+00B0	°	DEGREE SIGN
U+00B1	±	PLUS-MINUS SIGN
U+00B2	²	SUPERSCRIPT TWO
U+00B3	³	SUPERSCRIPT THREE

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Unicode Code Point	Character	Name
U+00B4	´	ACUTE ACCENT
U+00B5	µ	MICRO SIGN
U+00B6	¶	PILCROW SIGN
U+00B7	·	MIDDLE DOT
U+00B8	¸	CEDILLA
U+00B9	¹	SUPERSCRIPT ONE
U+00BA	º	MASCULINE ORDINAL INDICATOR
U+00BB	»	RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK
U+00BC	¼	VULGAR FRACTION ONE QUARTER
U+00BD	½	VULGAR FRACTION ONE HALF
U+00BE	¾	VULGAR FRACTION THREE QUARTERS
U+00BF	¿	INVERTED QUESTION MARK
U+00C0	À	LATIN CAPITAL LETTER A WITH GRAVE
U+00C1	Á	LATIN CAPITAL LETTER A WITH ACUTE
U+00C2	Â	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
U+00C3	Ã	LATIN CAPITAL LETTER A WITH TILDE
U+00C4	Ä	LATIN CAPITAL LETTER A WITH DIAERESIS
U+00C5	Å	LATIN CAPITAL LETTER A WITH RING ABOVE
U+00C6	Æ	LATIN CAPITAL LETTER AE
U+00C7	Ç	LATIN CAPITAL LETTER C WITH CEDILLA
U+00C8	È	LATIN CAPITAL LETTER E WITH GRAVE
U+00C9	É	LATIN CAPITAL LETTER E WITH ACUTE
U+00CA	Ê	LATIN CAPITAL LETTER E WITH CIRCUMFLEX
U+00CB	Ë	LATIN CAPITAL LETTER E WITH DIAERESIS
U+00CC	Ì	LATIN CAPITAL LETTER I WITH GRAVE
U+00CD	Í	LATIN CAPITAL LETTER I WITH ACUTE
U+00CE	Î	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
U+00CF	Ï	LATIN CAPITAL LETTER I WITH DIAERESIS
U+00D0	Ð	LATIN CAPITAL LETTER ETH
U+00D1	Ñ	LATIN CAPITAL LETTER N WITH TILDE
U+00D2	Ò	LATIN CAPITAL LETTER O WITH GRAVE
U+00D3	Ó	LATIN CAPITAL LETTER O WITH ACUTE
U+00D4	Ô	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
U+00D5	Õ	LATIN CAPITAL LETTER O WITH TILDE
U+00D6	Ö	LATIN CAPITAL LETTER O WITH DIAERESIS
U+00D7	×	MULTIPLICATION SIGN
U+00D8	Ø	LATIN CAPITAL LETTER O WITH STROKE
U+00D9	Ù	LATIN CAPITAL LETTER U WITH GRAVE
U+00DA	Ú	LATIN CAPITAL LETTER U WITH ACUTE
U+00DB	Û	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
U+00DC	Ü	LATIN CAPITAL LETTER U WITH DIAERESIS
U+00DD	Ý	LATIN CAPITAL LETTER Y WITH ACUTE

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Unicode Code Point	Character	Name
U+00DE	Þ	LATIN CAPITAL LETTER THORN
U+00DF	ß	LATIN SMALL LETTER SHARP S
U+00E0	à	LATIN SMALL LETTER A WITH GRAVE
U+00E1	á	LATIN SMALL LETTER A WITH ACUTE
U+00E2	â	LATIN SMALL LETTER A WITH CIRCUMFLEX
U+00E3	ã	LATIN SMALL LETTER A WITH TILDE
U+00E4	ä	LATIN SMALL LETTER A WITH DIAERESIS
U+00E5	å	LATIN SMALL LETTER A WITH RING ABOVE
U+00E6	æ	LATIN SMALL LETTER AE
U+00E7	ç	LATIN SMALL LETTER C WITH CEDILLA
U+00E8	è	LATIN SMALL LETTER E WITH GRAVE
U+00E9	é	LATIN SMALL LETTER E WITH ACUTE
U+00EA	ê	LATIN SMALL LETTER E WITH CIRCUMFLEX
U+00EB	ë	LATIN SMALL LETTER E WITH DIAERESIS
U+00EC	ì	LATIN SMALL LETTER I WITH GRAVE
U+00ED	í	LATIN SMALL LETTER I WITH ACUTE
U+00EE	î	LATIN SMALL LETTER I WITH CIRCUMFLEX
U+00EF	ï	LATIN SMALL LETTER I WITH DIAERESIS
U+00F0	ð	LATIN SMALL LETTER ETH
U+00F1	ñ	LATIN SMALL LETTER N WITH TILDE
U+00F2	ò	LATIN SMALL LETTER O WITH GRAVE
U+00F3	ó	LATIN SMALL LETTER O WITH ACUTE
U+00F4	ô	LATIN SMALL LETTER O WITH CIRCUMFLEX
U+00F5	õ	LATIN SMALL LETTER O WITH TILDE
U+00F6	ö	LATIN SMALL LETTER O WITH DIAERESIS
U+00F7	÷	DIVISION SIGN
U+00F8	ø	LATIN SMALL LETTER O WITH STROKE
U+00F9	ù	LATIN SMALL LETTER U WITH GRAVE
U+00FA	ú	LATIN SMALL LETTER U WITH ACUTE
U+00FB	û	LATIN SMALL LETTER U WITH CIRCUMFLEX
U+00FC	ü	LATIN SMALL LETTER U WITH DIAERESIS
U+00FD	ý	LATIN SMALL LETTER Y WITH ACUTE
U+00FE	þ	LATIN SMALL LETTER THORN
U+00FF	ÿ	LATIN SMALL LETTER Y WITH DIAERESIS

Clean with Mild Detergent and Warm Water

Wipe down the device with a soft cloth dampened with a mild detergent and warm water solution. Do not use any other chemicals for cleaning.

Repairs

Contact Banner Engineering for troubleshooting of this device. **Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.** If the device, device part, or device component is determined to be defective by a Banner Applications Engineer, they will advise you of Banner's RMA (Return Merchandise Authorization) procedure.

IMPORTANT: If instructed to return the device, pack it with care. Damage that occurs in return shipping is not covered by warranty.

Contact Us

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For worldwide locations and local representatives, visit www.bannerengineering.com.

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